Case Report

An atypical presentation of infiltrating ductal carcinoma

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ABSTRACT

A 64-year-old African-American female presented with nonbloody nipple discharge. Clinical and cytological examination of the discharge was normal. The mammography suggested pleomorphic calcification in the left breast. A stereotactic biopsy showed ductal carcinoma *in situ* and her estrogen receptor/progesterone receptor/human epidermal growth factor receptor 2-neu receptor were negative. We removed the tumor tissue through lumpectomy and found that the mass was invasive ductal carcinoma. This case report highlights invasive ductal carcinoma, presenting with unilateral nipple discharge.

Keywords: Ductal carcinoma *in situ*, infiltrating ductal carcinoma, nipple discharge, screening

Introduction

Breast carcinoma is the most common malignancy in females, and the most common subtype is ductal carcinoma *in situ* (DCIS). This type of cancer initiates in the mammary ducts and invades fatty tissues within the breast. It may present as a lump or mass; skin or nipple changes; rash or redness of breast; or lymphadenopathy.

Widespread use of mammography has caused an increase in early detection of breast carcinoma and a decrease in mortality rates.[1] If breast cancer is suspected from a mammogram, other diagnostic tests are used to confirm it.[2] Moreover, it has been reported that breast cancer can present with nipple discharge only; however, a palpable mass is usually identified in patients experiencing nipple discharge.[3] In this case, the patient had only nipple discharge without any underlying mass.

Case Report

A 64-year-old female with medical history of hypertension, diabetes mellitus type-2, obesity, and hyperlipidemia came to the clinic with nipple discharge from left breast. She did not

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have any fever, chest pain, palpitation, sweating, syncope, or weight loss.

On examination, her body mass index was 38.4. Her cardiovascular system, respiratory, gastrointestinal tract, and head, eyes, ears, throat and neck examination were normal. Her breast had no skin changes, nipple changes, mass or lymph node palpable. She was on atorvastatin 10 mg, Vitamin D3 1000 units, metformin 500 mg, metoprolol 100 mg, valsartan 160 mg, and hydrochlorothiazide 12.5 mg. She was fully compliant to all the medications.

Investigations

Complete blood count (CBC) and comprehensive metabolic panel (CMP) were normal. Mammography showed pleomorphic calcification in the left breast [Figures 1 and 2]. A concurrent sonogram showed an area of architectural distortion, but no discrete mass. Contrast computed tomography of the chest was normal. Stereotactic biopsy of the left breast was done, which showed DCIS [Figure 3]. Lymphoscintigraphy confirmed axillary nodal uptake [Figure 4]. Estrogen receptor/progesterone receptor/human epidermal growth factor receptor 2-neu receptor staining was negative. Magnetic resonance imaging and positron emission tomography scan were also negative.

Figure 1: Mammography showed pleomorphic calcification in the left breast at 9 o'clock position
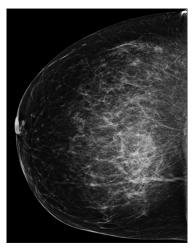

Figure 2: Mammography showed pleomorphic calcification in the left breast at 9 o'clock position

Figure 3: Biopsy of left breast mass showing ductal carcinoma *in situ*
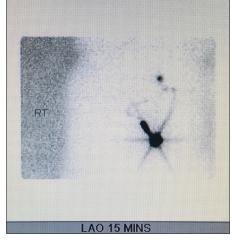
Figure 4: Axillary nodal uptake on lymphoscintigraphy

Baseline carcinoembryonic antigen and cancer antigen-27–29 level were 2.8 ng/mL (normal <3 ng/mL) and 43.9 U/mL (normal <38 U/mL), respectively.

Treatment

The patient opted for breast-conserving lumpectomy of the left breast. The histopathological report showed the tumor cells are arranged in cords, nests, and as individual cells confirming infiltrating ductal carcinoma (2 mm) with Nottingham Grade II [Figure 5]. After surgery, four cycles of docetaxel and cyclophosphamide were given every 21 days. Radiotherapy was also offered.

As is standard, a patient is typically required to return to their oncology office every 3 months for the first 2 years, then every 4 months for 2 years, and then every 6 months for 2 years for assessment of CBC and CMP levels. The patient is recommended for the follow-up for 6 years from the date of surgery. This is 2nd year of her follow-up, she is in good health.
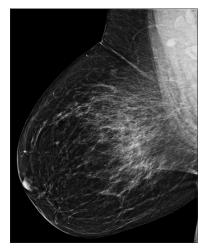
Discussion

Breast cancer is the second leading cause of death in the USA. The American Cancer Society and the United States Preventive Services Task Force both recommend mammography beginning at age 50 years.[4]

Breast cancer is a heterogeneous disease with a broad range of clinical manifestations and histological types. As a result, a patient's individual prognosis at the time of diagnosis requires a detailed examination of as many clinical and pathological parameters as possible. Nipple discharge is a common complaint accounting for up to 5% of referrals to the breast clinic.[4] The use of cytology for the investigation of nonblood-stained nipple discharge is controversial as the malignant disease is rare with normal clinical examination and radiological investigation. It has been suggested that the significant clinical predictor of malignant disease in patients with nipple discharge is the presence of a palpable lesion, age >50[4] and blood-stained discharge.[5] Some authors have therefore suggested that nipple
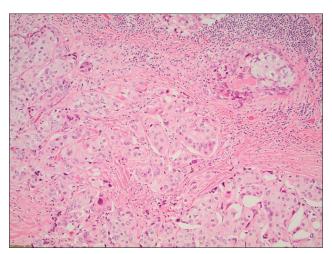
Figure 5: Histopathology: The tumor cells are arranged in cords, nests and as individual cells confirming infiltrating ductal carcinoma

cytology is of limited benefit in the assessment of patients with nonblood-stained nipple discharge.[6,7]

DCIS refers to a premalignant, localized stage of breast cancer that is confined to the breast ducts.[1] It is the most common noninvasive breast cancer, and if left untreated, it can become invasive.[8] It is clear that early detection of DCIS is critical, where the overall mortality rate is 1%–2%.[2] Therefore, early detection and timely therapy can reduce breast cancer mortality.[9]

The prognosis predictions for patients with breast cancer have become more accurate in recent years. Histology, tumor stage, and lymph node status are now supplemented with measurements of steroid hormone receptors, ploidy, S-phase fractions, growth factors, oncogenes, and oncogenic products.[7] The various prognostic indicators not only predict the disease outcome but can guide the correct treatment strategy for patients.[10] New advances in immunotherapies may help treat DCIS, for example, therapeutic tumor vaccines and immune checkpoint blockade.[11] This highlights the diagnosis and management of Invasive ductal carcinoma. She presented with nipple discharge and her biopsy showed DCIS. Due to proper investigations and timely intervention, we managed to diagnose her with infiltrating ductal carcinoma. After chemotherapy and radiotherapy, she is presently in good health.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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